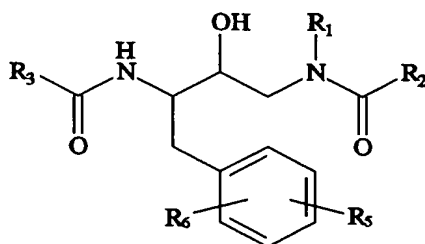


**WHAT IS CLAIMED IS:**

1                    1.     A method for modulating the processing of an amyloid precursor  
 2 protein (APP), said method comprising contacting a composition containing said APP  
 3 with an aspartyl protease inhibitor having the general formula:



4  
 5 wherein:

6                    R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are members independently selected from the group  
 7 consisting of alkyl, substituted alkyl, aryl, substituted aryl,  
 8 arylalkyl, substituted arylalkyl, aryloxyalkyl, substituted  
 9 aryloxyalkyl, heteroaryl, substituted heteroaryl, heteroarylalkyl,  
 10 substituted heteroarylalkyl, heterocycles, substituted heterocycles,  
 11 heterocyclicalkyl and substituted heterocyclicalkyl; and

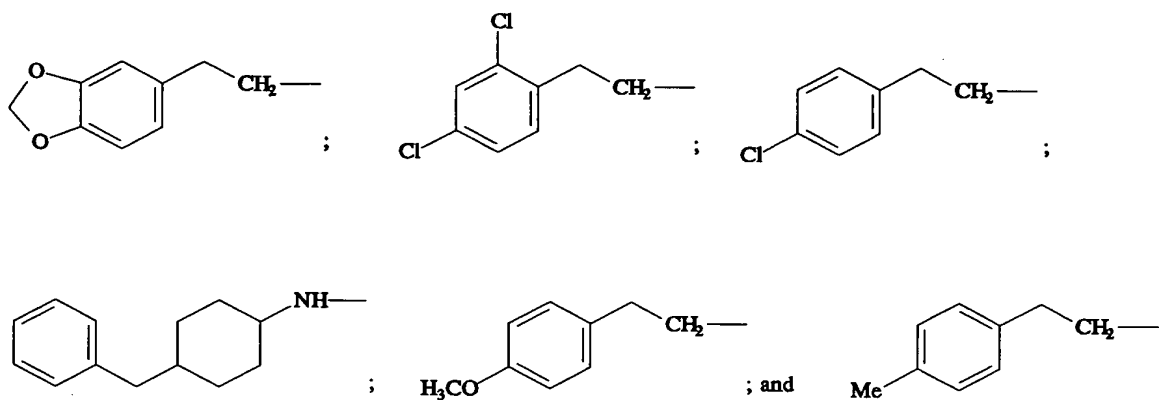
12                    R<sub>5</sub> and R<sub>6</sub> are independently selected from the group consisting of  
 13 hydrogen, halogen, alkyl, substituted alkyl, aryl, substituted aryl,  
 14 arylalkyl, substituted arylalkyl, aryloxyalkyl and substituted  
 15 aryloxyalkyl; or R<sup>5</sup> and R<sup>6</sup> and the carbons to which they are bound  
 16 join to form an optionally substituted carbocyclic or heterocyclic  
 17 fused ring system having a total of 9- or 10-ring atoms within said  
 18 fused ring system.

1                    2.     The method according to claim 1, wherein:

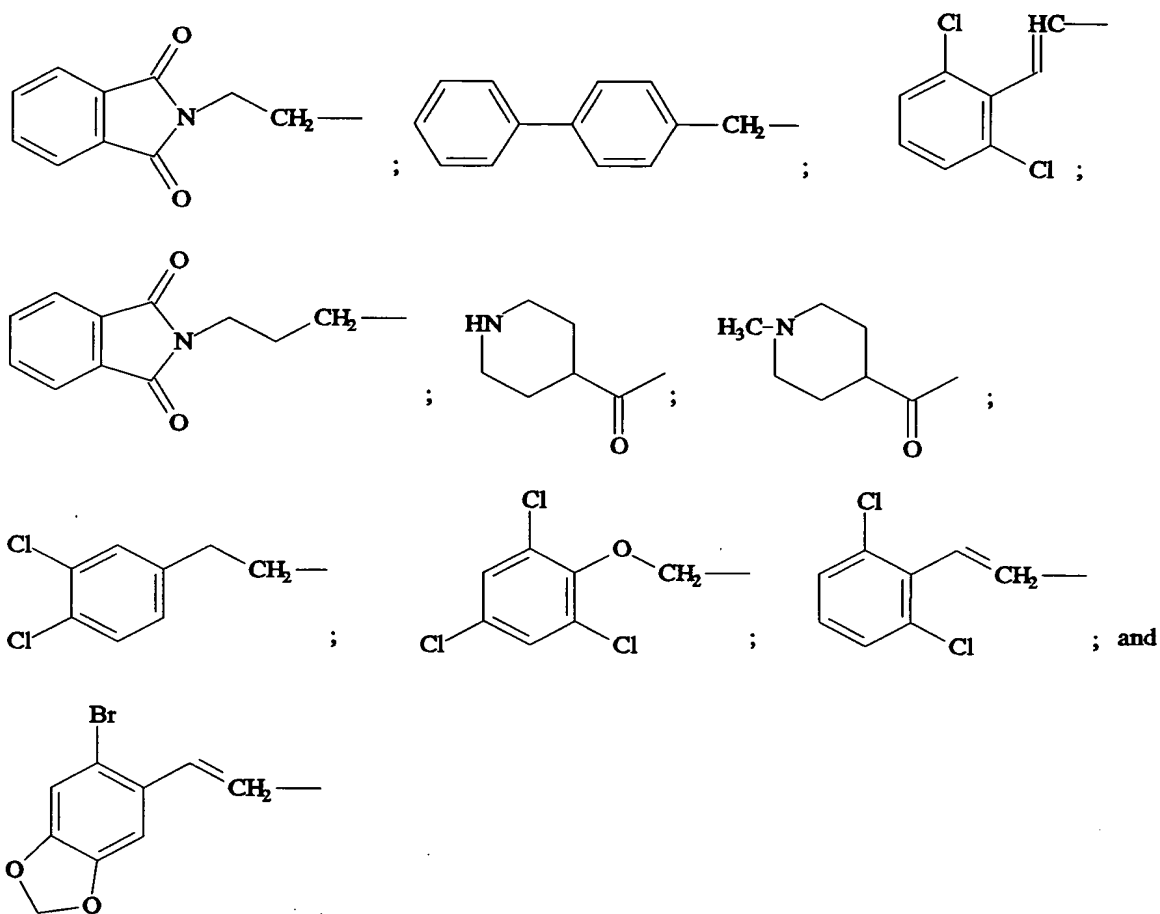
2                    R<sub>1</sub> is a member selected from the group consisting of substituted alkylaryl,  
 3 substituted aryl, substituted alkyl and substituted heterocyclic groups.

1                    3.     The method according to claim 2, wherein:

2                    R<sub>1</sub> is a member selected from the group consisting of:

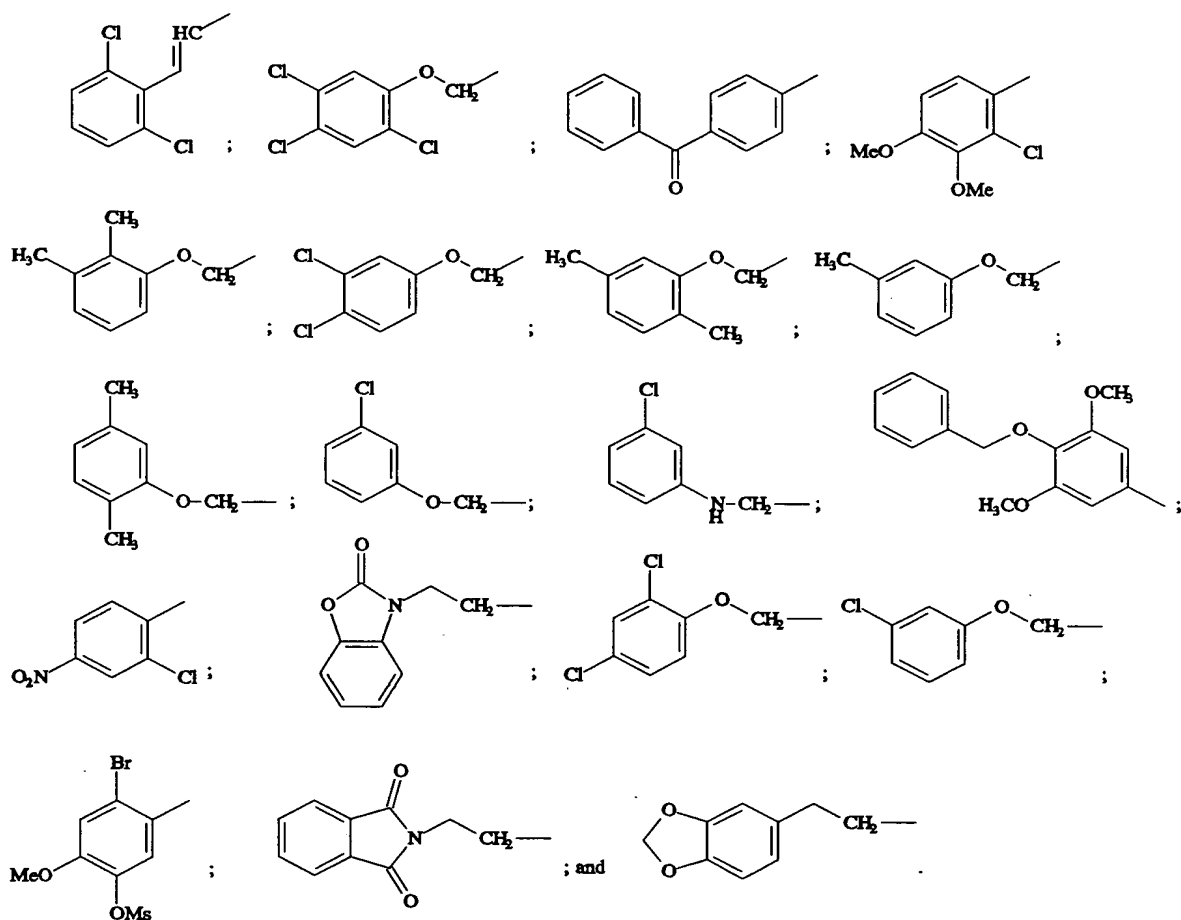


- 1                    4.     The method according to claim 1, wherein:
- 2                     $R_2$  is a member selected from the group consisting of substituted alkyl,
- 3                    heterocyclic and substituted heterocyclic groups.
  
- 1                    5.     The method according to claim 4, wherein  $R_2$  is a member selected
- 2                    from the group consisting of:



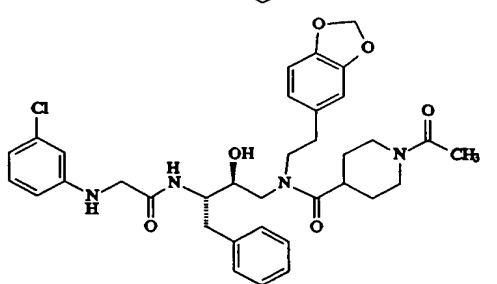
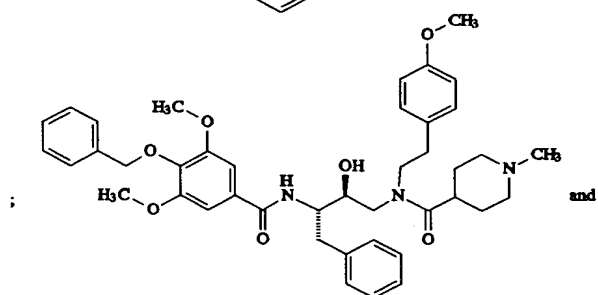
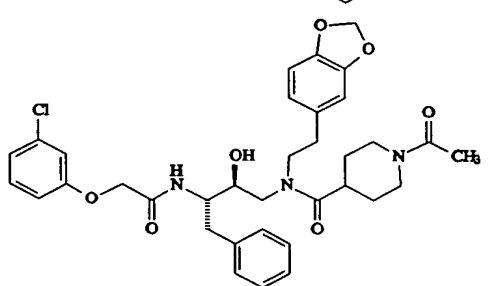
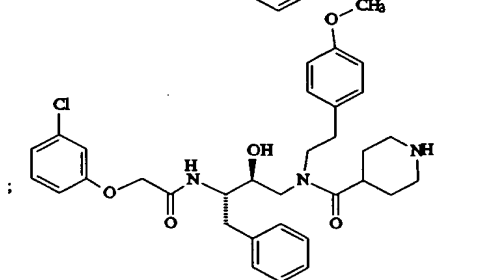
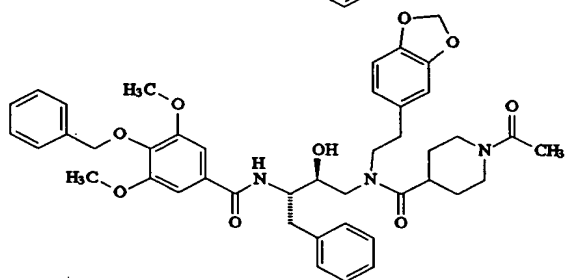
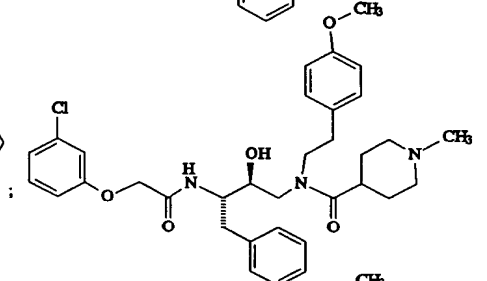
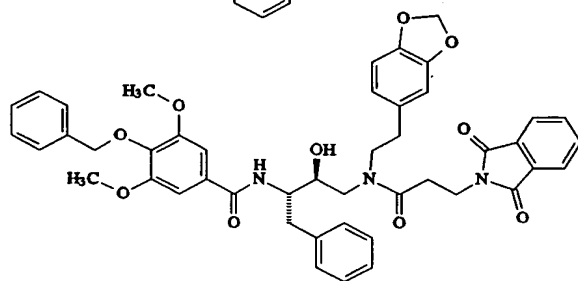
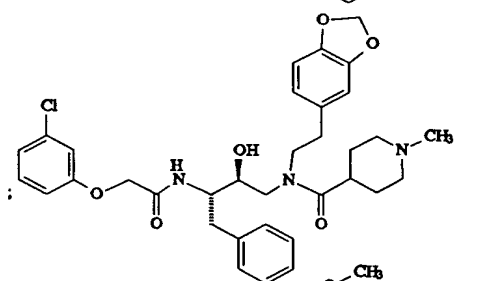
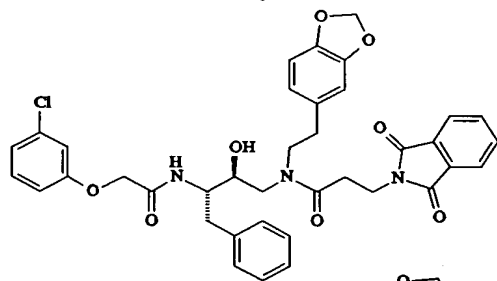
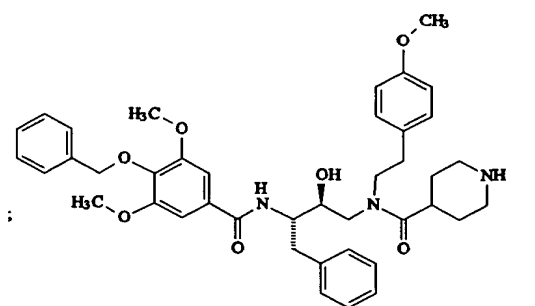
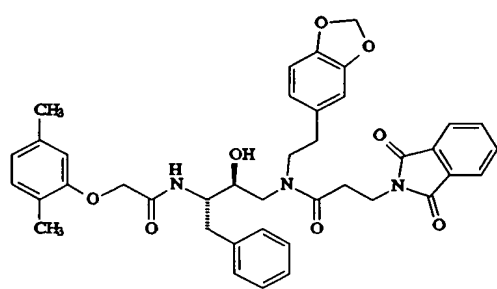
1                    6.     The method according to claim 1, wherein:  
 2                    R<sub>3</sub> is a member selected from the group consisting of substituted alkyl and  
 3                    substituted aryl groups.

1                    7.     The method according to claim 6, wherein R<sub>3</sub> is a member selected  
 2                    from the group consisting of:

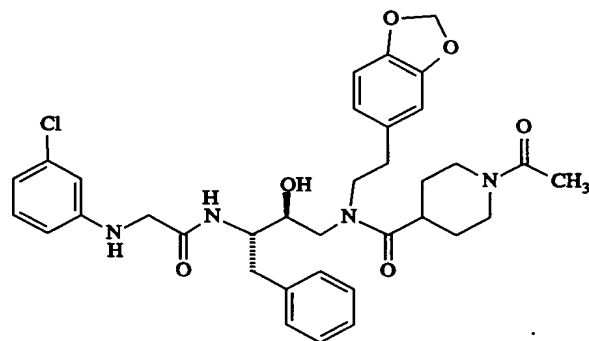
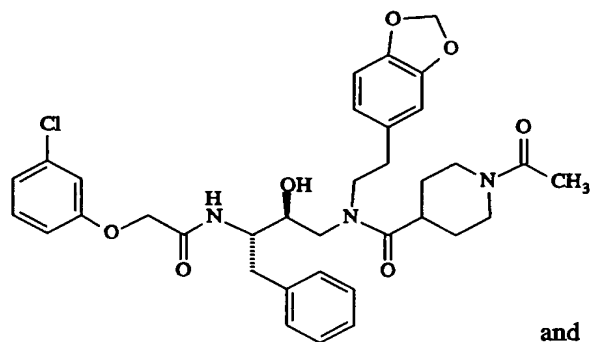


- 1                    8.     The method according to claim 1, wherein  $R_5$  and  $R_6$  and the  
2 carbons to which they are bound form an optionally substituted naphthalene ring.
  
- 1                    9.     The method according to claim 1, wherein  $R_5$  and  $R_6$  are both  
2 hydrogen.
  
- 1                    10.    The method in accordance with claim 1, wherein  $R_5$  is hydrogen  
2 and  $R_6$  is meta or para to  $R_5$  and is a member selected from the group consisting of  
3 halogen, alkyl, substituted alkyl, aryl, substituted aryl, arylalkyl, substituted arylalkyl,  
4 aryloxyalkyl and substituted aryloxyalkyl.
  
- 1                    11.    The method according to claim 1, wherein said aspartyl protease  
2 inhibitor is a member selected from the group consisting of:





1                   12. The method according to claim 1, wherein said aspartyl protease  
2 inhibitor is a member selected from the group consisting of:



1                   13. The method in accordance with claim 1, wherein said aspartyl  
2 protease inhibitor is a member selected from the group consisting of CEL5-A, CEL5-G  
3 and EA-1, which are illustrated in FIG. 12.

1                   14. The method in accordance with claim 1, wherein said composition  
2 is a body fluid.

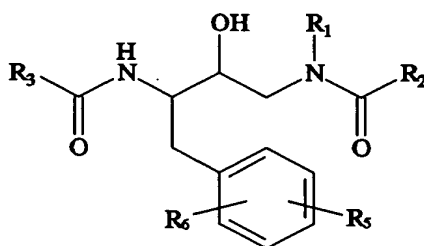
1                   15. The method in accordance with claim 13, 14, wherein said body  
2 fluid is cerebral spinal fluid.

1                   16. The method in accordance with claim 1, whereby formation of  
2 amyloidogenic A $\beta$  peptides (A $\beta$ ) is decreased compared to the amount formed in the  
3 absence of said aspartyl protease inhibitor.

1                    17. The method in accordance with claim 1, whereby formation of  
2  $\alpha$ -sAPP is increased compared to the amount formed in the absence of said aspartyl  
3 protease inhibitor.

1                    18. The method in accordance with claim 1, wherein the modulation  
2 is effected by modulating the activity of cathepsin D.

1                    19. A method for modulating the processing of a tau-protein ( $\tau$ -  
2 protein), said method comprising contacting a composition containing said  $\tau$ -protein with  
3 an aspartyl protease inhibitor having the general formula:



4                    (I)  
5 wherein:

6                    R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are members independently selected from the group  
7 consisting of alkyl, substituted alkyl, aryl, substituted aryl,  
8 arylalkyl, substituted arylalkyl, aryloxyalkyl, substituted  
9 aryloxyalkyl, heteroaryl, substituted heteroaryl, heteroarylalkyl,  
10 substituted heteroarylalkyl, heterocycles, substituted heterocycles,  
11 heterocyclicalkyl and substituted heterocyclicalkyl; and

12                    R<sub>5</sub> and R<sub>6</sub> are independently selected from the group consisting of  
13 hydrogen, halogen, alkyl, substituted alkyl, aryl, substituted aryl,  
14 arylalkyl, substituted arylalkyl, aryloxyalkyl and substituted  
15 aryloxyalkyl; or R<sup>5</sup> and R<sup>6</sup> and the carbons to which they are bound  
16 join to form an optionally substituted carbocyclic or heterocyclic  
17 fused ring system having a total of 9- or 10-ring atoms within said  
18 fused ring system.

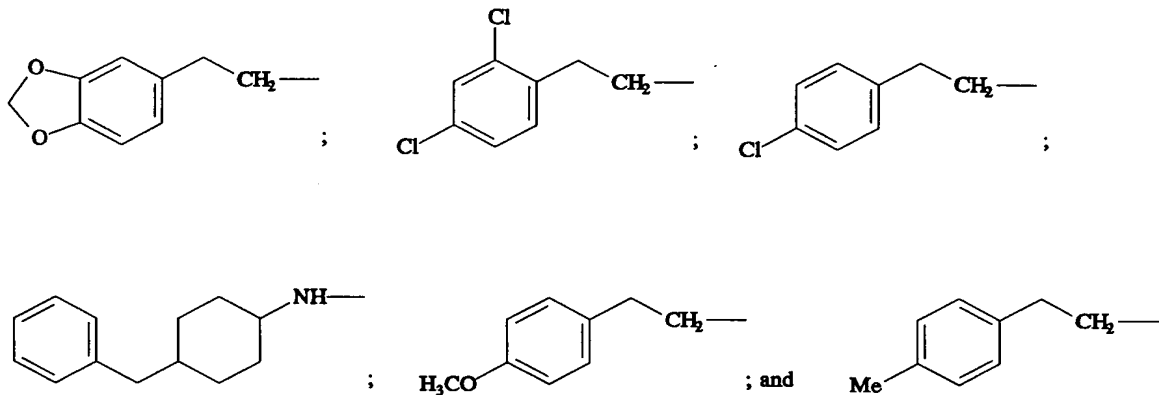
1                    20. The method according to claim 19, wherein:



$R_1$  is a member selected from the group consisting of substituted alkylaryl, substituted aryl, substituted alkyl and substituted heterocyclic groups.

21. The method according to claim 20, wherein:

$R_1$  is a member selected from the group consisting of:

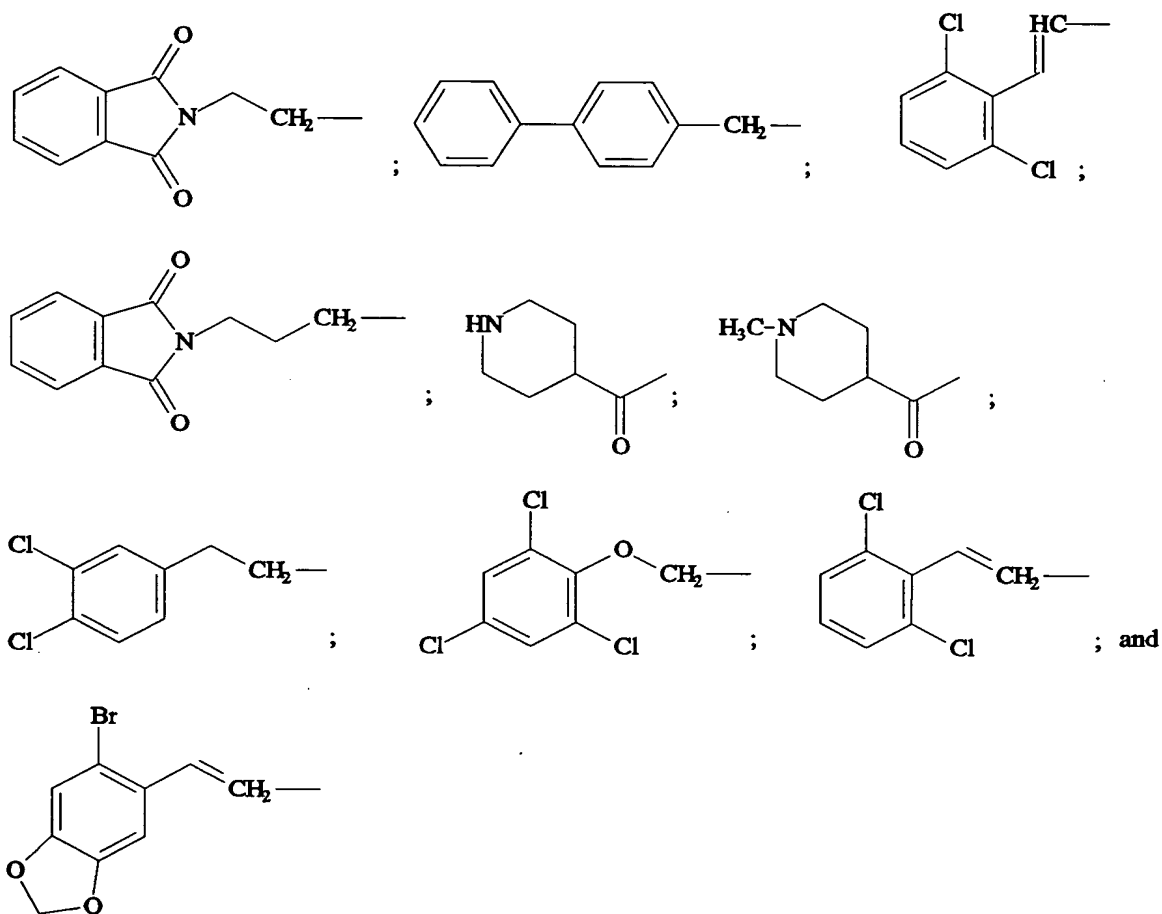


22. The method according to claim 19, wherein:

$R_2$  is a member selected from the group consisting of substituted alkyl, heterocyclic and substituted heterocyclic groups.

23. The method according to claim 22, wherein  $R_2$  is a member

selected from the group consisting of:



1                    24.    The method according to claim 19, wherein:  
 2                     $R_3$  is a member selected from the group consisting of substituted alkyl and  
 3 substituted aryl groups.

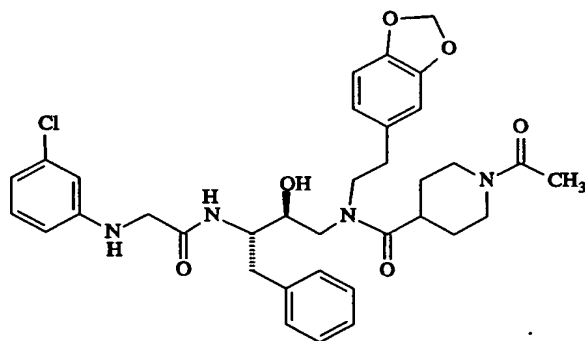
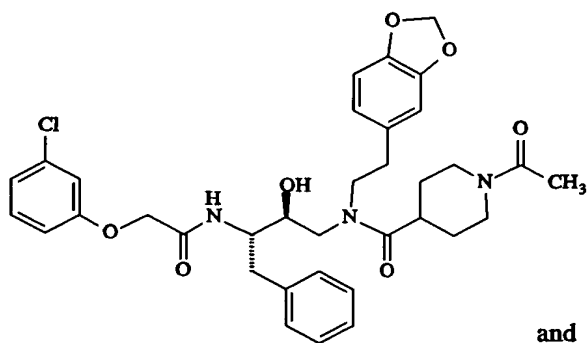
1                    25.    The method according to claim 24, wherein  $R_3$  is a member  
 2 selected from the group consisting of:

- 1                   26.     The method according to claim 19, wherein R<sub>5</sub> and R<sub>6</sub> and the  
2     carbons to which they are bound form an optionally substituted naphthalene ring.
- 1                   27.     The method according to claim 19, wherein R<sub>5</sub> and R<sub>6</sub> are both  
2     hydrogen.
- 1                   28.     The method in accordance with claim 19, wherein R<sub>5</sub> is hydrogen  
2     and R<sub>6</sub> is meta or para to R<sub>5</sub> and is a member selected from the group consisting of  
3     halogen, alkyl, substituted alkyl, aryl, substituted aryl, arylalkyl, substituted arylalkyl,  
4     aryloxyalkyl and substituted aryloxyalkyl.
- 1                   29.     The method according to claim 19, wherein said aspartyl protease  
2     inhibitor is a member selected from the group consisting of:





1                   **30.**    The method according to claim 19, wherein said aspartyl protease  
2 inhibitor is a member selected from the group consisting of:



1                   **31.**    The method in accordance with claim 19, wherein said aspartyl  
2 protease inhibitor is a member selected from the group consisting of CEL5-A, CEL5-G  
3 and EA-1, which are illustrated in FIG. 12.

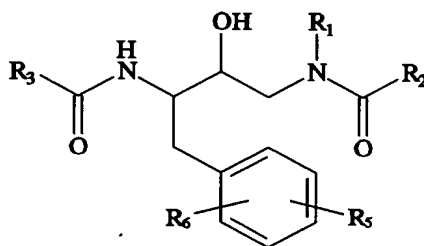
1                   **32.**    The method in accordance with claim 19, wherein said  
2 composition is a body fluid.

1                   **33.**    The method in accordance with claim 31, 32, wherein said body  
2 fluid is cerebral spinal fluid.

1                   **34.**    The method in accordance with claim 19, whereby formation of  
2  $\tau$ -fragments is decreased compared to the amount formed in the absence of said aspartyl  
3 protease inhibitor.

1                   **35.**    The method in accordance with claim 19, wherein the modulation  
2 is effected by modulating the activity of cathepsin D.

36. A method for treating a neurodegenerative disorder, said method comprising: administering to a mammal a therapeutically effective amount of an aspartyl protease inhibitor having the general formula:



(I)

wherein:

R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are members independently selected from the group consisting of alkyl, substituted alkyl, aryl, substituted aryl, arylalkyl, substituted arylalkyl, aryloxyalkyl, substituted aryloxyalkyl, heteroaryl, substituted heteroaryl, heteroarylalkyl, substituted heteroarylalkyl, heterocycles, substituted heterocycles, heterocyclicalkyl and substituted heterocyclicalkyl; and

R<sub>5</sub> and R<sub>6</sub> are independently selected from the group consisting of hydrogen, halogen, alkyl, substituted alkyl, aryl, substituted aryl, arylalkyl, substituted arylalkyl, aryloxyalkyl and substituted aryloxyalkyl; or R<sup>5</sup> and R<sup>6</sup> and the carbons to which they are bound join to form an optionally substituted carbocyclic or heterocyclic fused ring system having a total of 9- or 10-ring atoms within said fused ring system; and

a pharmaceutically acceptable carrier.

37. The method in accordance with claim 36, wherein said neurodegenerative disorder is characterized by the accumulation of amyloid plaques.

38. The method in accordance with claim 36, wherein said neurodegenerative disorder is characterized by the accumulation of  $\tau$ -fragments.

39. The method in accordance with claim 36, wherein said neurodegenerative disorder is a member selected from the group consisting of

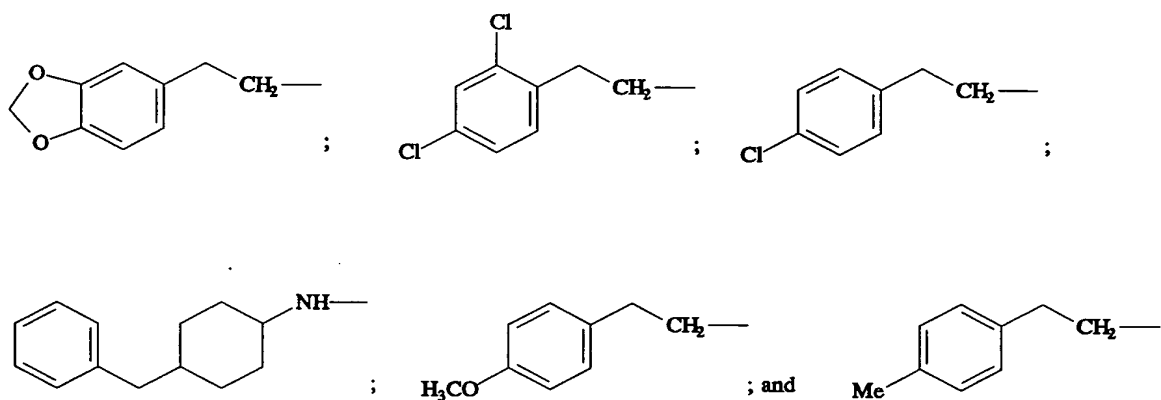
Alzheimer's disease, Parkinson's disease, cognition defects, Downs Syndrome, cerebral hemorrhage with amyloidosis, dementia and head trauma.

**40.** The method according to claim 36, wherein:

$R_1$  is a member selected from the group consisting of substituted alkylaryl, substituted aryl, substituted alkyl and substituted heterocyclic groups.

**41.** The method according to claim 40, wherein:

$R_1$  is a member selected from the group consisting of:

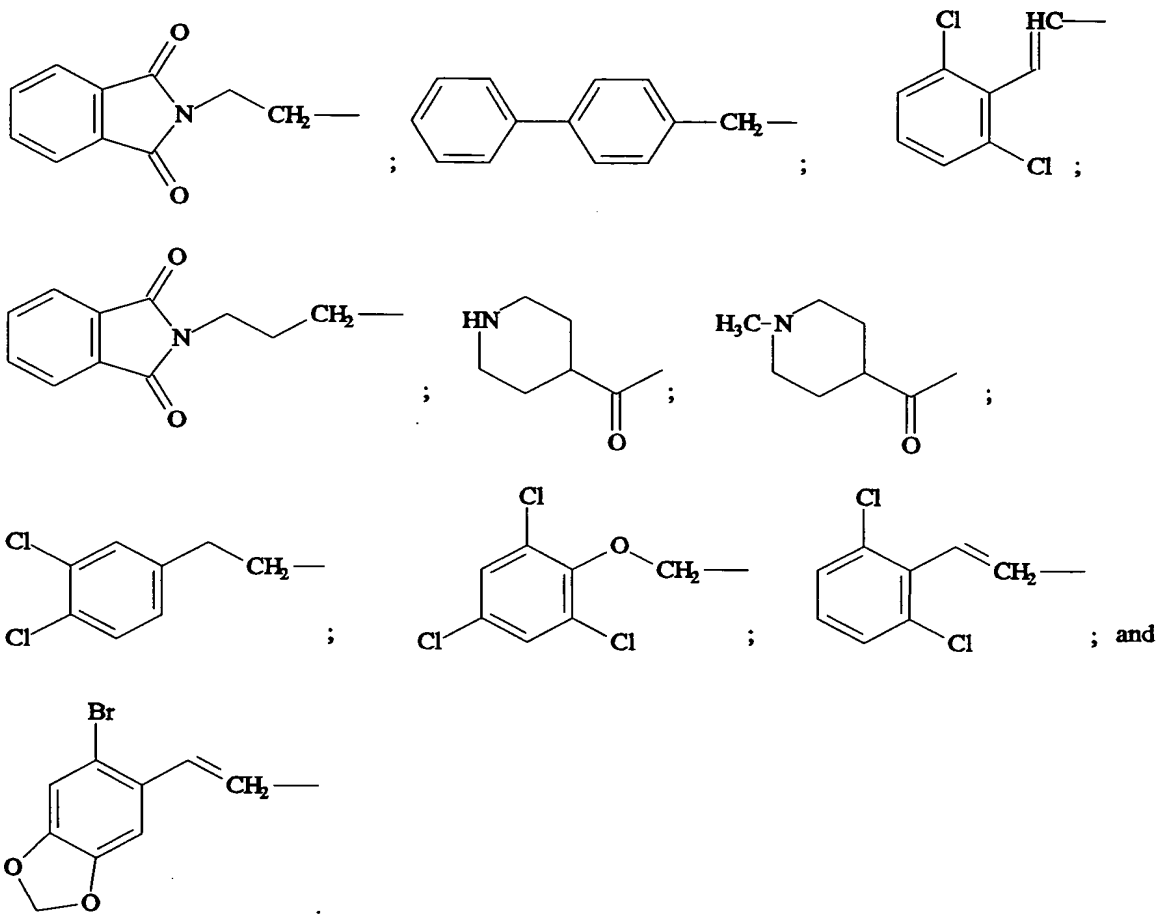


**42.** The method according to claim 36, wherein:

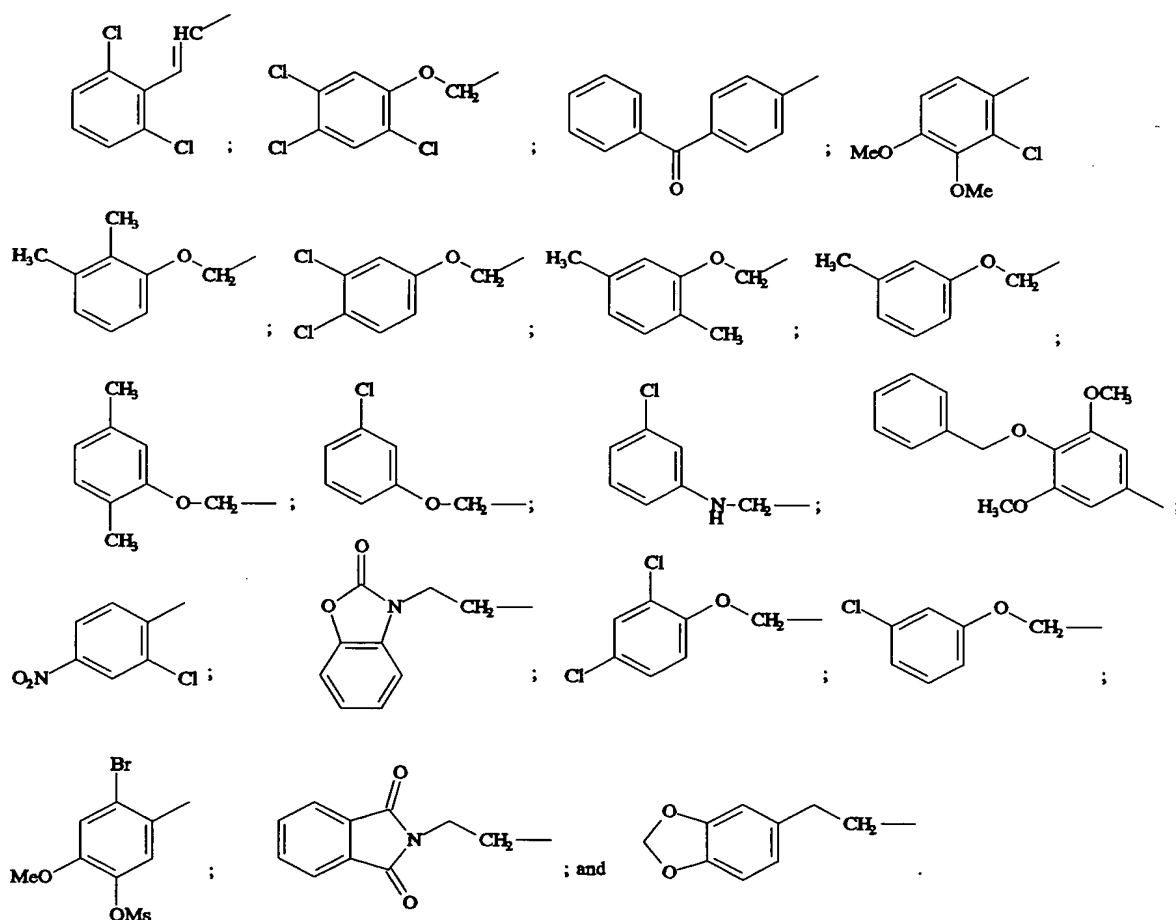
$R_2$  is a member selected from the group consisting of substituted alkyl, heterocyclic and substituted heterocyclic groups.

**43.** The method according to claim 42, wherein  $R_2$  is a member selected from the group consisting of:





- 1                   **44.**     The method according to claim **36**, wherein:  
2                   R<sub>3</sub> is a member selected from the group consisting of substituted alkyl and  
3                   substituted aryl groups.
- 1                   **45.**     The method according to claim **44**, wherein R<sub>3</sub> is a member  
2                   selected from the group consisting of:

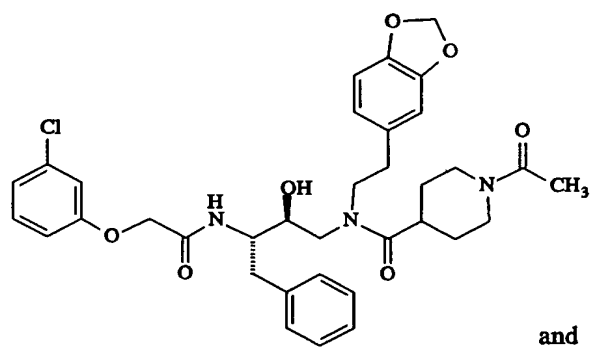


1                    46.    The method according to claim 36, wherein R<sub>5</sub> and R<sub>6</sub> and the  
2 carbons to which they are bound form an optionally substituted naphthalene ring.

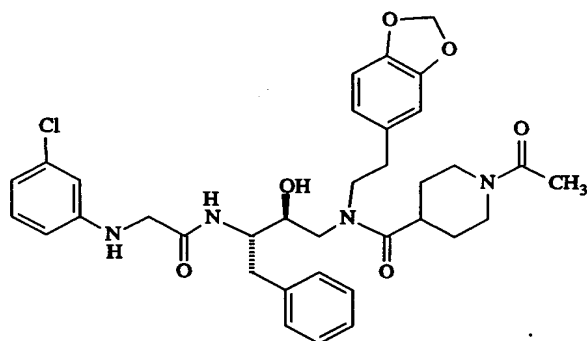
1                    47.    The method according to claim 36, wherein R<sub>5</sub> and R<sub>6</sub> are both  
2 hydrogen.

1                    48.    The method in accordance with claim 36, wherein R<sub>5</sub> is hydrogen  
2 and R<sub>6</sub> is meta or para to R<sub>5</sub> and is a member selected from the group consisting of  
3 halogen, alkyl, substituted alkyl, aryl, substituted aryl, arylalkyl, substituted arylalkyl,  
4 aryloxyalkyl and substituted aryloxyalkyl.

1                    49.    The method in accordance with claim 36, wherein said aspartyl  
2 protease inhibitor is a member selected from the group consisting of:



and



- 1                                    **50.** The method in accordance with claim 36, wherein said aspartyl  
2    protease inhibitor is a member selected from the group consisting of CEL5-A, CEL5-G  
3    and EA-1, which are illustrated in FIG. 12.